Course website

http://math.pugetsound.edu/~jbernhard

Contact information

James Bernhard • jbernhard@pugetsound.edu • Thompson Hall 390G

For my office hours, see the course website. My office phone number is 253.879.3812, but the phone is usually one of the slowest ways to reach me. Email is usually much faster. (All of my email is forwarded to another account, so you may receive email from me at that account as well.) Neither phone nor email will necessarily reach me “after hours” (on nights and weekends), so please take that into account when you contact me via either one.

The course website is the best resource for information about the course. Among other things, it contains a complete calendar for the semester, including all assignments. Also, if you email me a password when I request one, you will be able to access your grade-to-date any time during the semester via the course website.

Learning outcomes

Upon completion of this course, students will be able to:

• understand what contemporary higher mathematics is about, having investigated the mathematics of symmetry as an illustrative example.

• appreciate mathematics as a cultural activity that has been practiced around the world for millennia.

• understand the history of mathematical group theory.

• understand the basics of mathematical group theory and how it is used to study both concrete and abstract symmetry.

In this course, we will study the mathematics of symmetry for its intrinsic interest, for its applications, and as an illustrative example of higher mathematics.

Prerequisites

The only prerequisite for this course is admission into the Honors Program.
Course materials

The required text for this course is *The Equation That Couldn’t Be Solved: How Mathematical Genius Discovered the Language of Symmetry* by Mario Livio, which is available at the campus bookstore. You won’t need any particular specialized technology for this course.

Coursework

The coursework consists of:

• Approximately weekly homework assignments.
• Approximately weekly reading questions, during the first part of the semester.
• Two take-home tests.
• One paper.
• A project (paper and presentation) due at the end of the semester.

There is no final exam for this course. The course is finished on the last day of class.

Grading

Your grade will be based on my assessment of your understanding of the material. By default, I will weight the various components of the course as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework assignments</td>
<td>25%</td>
</tr>
<tr>
<td>Reading questions</td>
<td>5%</td>
</tr>
<tr>
<td>Test 1</td>
<td>20%</td>
</tr>
<tr>
<td>Test 2</td>
<td>25%</td>
</tr>
<tr>
<td>Paper</td>
<td>10%</td>
</tr>
<tr>
<td>Project</td>
<td>15%</td>
</tr>
</tbody>
</table>

However, these weights are subject to change due to individual circumstances, so if you believe the above components do not accurately represent your understanding of the material, please let me know. If the circumstances dictate, I can work with you to find another way to demonstrate your understanding of the material.

Late work policy

I will not accept late work without an appropriate reason, which you should explain to me before the work is late if possible. If you are falling behind or need to turn something in late, please see me so that we can discuss it.
Attendance policy

I will not be taking attendance in this class. You are responsible for the material that we cover in class whether or not you are in attendance. Since it is extremely difficult to keep up in the course without attending regularly, I expect absences to be rare. I do not ordinarily give make-up tests, so if you must be absent during one of those, please let me know as early as possible so that we can discuss the situation.

Academic honesty

On homework assignments, you are allowed to work with anyone (including each other, tutors, and me), as long as you do so in a way that helps you learn the material. As a specific aspect of this, you may communicate with others orally about homework assignments, and you are allowed to make written scratchwork together with others, but you are not allowed to read even part of anyone else’s homework assignment write-up.

On tests and reading questions, you are not allowed to work with anyone. If you have questions on either of these, you should ask only me.

On the paper and on the project, you are not allowed to work with anyone other than for general reading and writing advice. For example, you may have friends or tutors at the CWLT help you with routine proof-reading and editing.

For general information on issues of academic honesty, see the official University of Puget Sound academic honesty policy at:

http://www.pugetsound.edu/student-life/student-resources/student-handbook/academic-handbook/academic-integrity/

Other

Feel free to contact me with any questions you have regarding the course. I very much want each and every one of you to succeed in this class.

I look forward to an enjoyable class with you this semester!
The following information should be included in the syllabus for every class that you take at the University of Puget Sound:

**Classroom Emergency Response Guidance**

Please review university emergency preparedness, response procedures and a training video posted at www.pugetsound.edu/emergency/. There is a link on the university home page. Familiarize yourself with hall exit doors and the designated gathering area for your class and laboratory buildings.

If building evacuation becomes necessary (e.g. earthquake), meet your instructor at the designated gathering area so she/he can account for your presence. Then wait for further instructions. Do not return to the building or classroom until advised by a university emergency response representative.

If confronted by an act of violence, be prepared to make quick decisions to protect your safety. Flee the area by running away from the source of danger if you can safely do so. If this is not possible, shelter in place by securing classroom or lab doors and windows, closing blinds, and turning off room lights. Lie on the floor out of sight and away from windows and doors. Place cell phones or pagers on vibrate so that you can receive messages quietly. Wait for further instructions.

**Student Accessibility and Accommodation**

If you have a physical, psychological, medical or learning disability that may impact your coursework, please contact Peggy Perno, Director of Student Accessibility and Accommodation, 105 Howarth, 253.879.3399. She will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

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